

We Claim:

1. A communication network for providing emergency services, the communication network comprising:

an emergency services network connected to a packet network, the emergency services
5 network comprising:

a plurality of emergency services, and

a plurality of response gateways connected to the emergency services; and

a plurality of conforming emergency systems connected to the packet network, each of
the conforming emergency systems facilitates the establishment of a media channel with one of
10 the response gateways, wherein a conforming emergency system (CES), responsive to
establishing a media channel with one of the response gateways over the packet network and
responsive to an emergency event, transmits a retrieval key over the media channel to the one
response gateway;

the one response gateway, responsive to receiving the retrieval key from the CES,
15 transmits queries for information corresponding with the retrieval key, receives the information
originating from the emergency services corresponding with the retrieval key, and transmits the
information over the media channel to the CES to facilitate the CES in handling an emergency
event.

20 2. The communication network of claim 1 wherein the CES facilitates the establishment of the
media channel using Session Initiation Protocol (SIP).

3. The communication network of claim 1 wherein:

the CES transmits a request message for the media channel to the packet network; and
the one response gateway receives the request message, and responds to the request
message to dynamically establish the media channel.

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4. The communication network of claim 3 wherein:

the one response gateway responds to the request message by transmitting a response
message to the packet network indicating an acceptance of the media channel; and

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the CES receives the response message, and initiates a process to dynamically establish
the media channel between the CES and the one response gateway over the packet network.

5. The communication network of claim 3 wherein:

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the one response gateway responds to the request message by initiating a process to
dynamically establish the media channel between the CES and the one response gateway over
the packet network.

6. The communication network of claim 3 wherein:

the one response gateway negotiates parameters of the media channel before the media
channel is dynamically established.

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7. The communication network of claim 3 further comprising:

a channel setup system connected to the packet network, the channel setup system, responsive to receiving the request message from the CES, selects the one response gateway, and transmits the request message to the one response gateway.

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8. The communication network of claim 7 wherein:

the channel setup system includes a data structure that stores information on the plurality of response gateways, the channel setup system accesses the information in the data structure to select the one response gateway.

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9. The communication network of claim 8 wherein the information in the data structure includes at least one of a capacity or current load of each of the plurality of response gateways, an operational status of each of the plurality of response gateways, a number of media channels established with each of the plurality of response gateways, security, a location of each response gateway, data connectivity speed of each response gateway, the type of protocol used by each response gateway, or the type of each response gateway.

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10. The communication network of claim 7 wherein the channel setup system comprises a Session Initiation Protocol (SIP) proxy or a SIP server.

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11. The communication network of claim 7 wherein:

the one response gateway responds to the request message by transmitting a response message indicating an acceptance of the media channel to the channel setup system; and

the channel setup system receives the response message and transmits the response message to the CES.

12. The communication network of claim 7 wherein:

the one response gateway responds to the request message by transmitting a response message indicating an acceptance of the media channel to the CES.

13. The communication network of claim 1 wherein:

the one response gateway transmits a request message for the media channel to the packet network; and

the CES receives the request message, and responds to the request message to dynamically establish the media channel.

14. The communication network of claim 13 wherein:

the CES responds to the request message by transmitting a response message to the packet network indicating an acceptance of the media channel; and

the one response gateway receives the response message, and initiates a process to dynamically establish the media channel between the CES and the one response gateway over the packet network.

15. The communication network of claim 13 wherein:

the CES responds to the request message by initiating a process to dynamically establish the media channel between the CES and the one response gateway over the packet network.

5 16. The communication network of claim 13 wherein:

the response gateway negotiates parameters of the media channel before the media channel is dynamically established.

17. The communication network of claim 13 further comprising:

10 a channel setup system connected to the packet network, the channel setup system, responsive to receiving the request message from the one response gateway, transmits the request message to the CES.

18. The communication network of claim 17 wherein the channel setup system comprises a

15 Session Initiation Protocol (SIP) proxy or a SIP server.

19. The communication network of claim 17 wherein:

the CES responds to the request message by transmitting a response message indicating an acceptance of the media channel to the channel setup system; and

20 the channel setup system receives the response message and transmits the response message to the one response gateway.

20. The communication network of claim 17 wherein:

the CES responds to the request message by transmitting a response message indicating an acceptance of the media channel to the one response gateway.

5 21. The communication network of claim 1 wherein the CES comprises a computer system for a Public Safety Answering Point (PSAP).

10 22. The communication network of claim 1 wherein the CES comprises a computer system for one of a hospital, a police department, a fire station, a fire alarm company, a security company, an ambulance service, a state 9-1-1 coordinator, the Federal Emergency Management Agency (FEMA), the Department of Homeland Security, the National Geophysical Data Center, or the Center for Disease Control (CDC).

23. The communication network of claim 1 further comprising:

15 an SNR system that receives the retrieval key from the one response gateway, identifies which of the plurality of emergency services correspond with the retrieval key, and transmits a message to the one response gateway indicating the identified emergency services; and

the one response gateway receives the message from the SNR system, and transmits queries that include the retrieval key to each of the identified emergency services.

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24. The communication network of claim 23 wherein:

at least one of the identified emergency services responds to the queries by transmitting information corresponding with the retrieval key to the one response gateway; and

the one response gateway transmits the information to the CES to facilitate the CES in handling an emergency event.

25. The communication network of claim 23 wherein:

at least one of the identified emergency services responds to the queries by transmitting information corresponding with the retrieval key to the CES to facilitate the CES in handling an emergency event.

26. The communication network of claim 23 wherein one of the identified emergency services initiates a notification service for notifying third parties of the emergency event responsive to a query.

27. The communication network of claim 1 further comprising:

an SNR system that receives the retrieval key from the one response gateway, identifies which of the plurality of emergency services correspond with the retrieval key, and transmits queries that include the retrieval key to each of the identified emergency services.

28. The communication network of claim 27 wherein:

at least one of the identified emergency services responds to the queries by transmitting information corresponding with the retrieval key to the SNR system;

the SNR system receives the information corresponding with the retrieval key and
5 transmits the information to the one response gateway; and

the one response gateway transmits the information to the CES to facilitate the CES in handling an emergency event.

29. The communication network of claim 27 wherein:

10 at least one identified emergency service responds to the queries by transmitting information corresponding with the retrieval key to the SNR system;

the SNR system receives the information corresponding with the retrieval key and transmits the information to the CES to facilitate the CES in handling an emergency event.

15 30. The communication network of claim 27 wherein one of the identified emergency services initiates a notification service for notifying third parties of the emergency event responsive to a query.

31. The communication network of claim 27 wherein:

the queries also include an instruction to transmit the information to the one response gateway;

at least one of the identified emergency services responds to the queries by transmitting information corresponding with the retrieval key to the one response gateway; and

the one response gateway transmits the information to the CES to facilitate the CES in handling an emergency event.

32. The communication network of claim 27 wherein:

the queries also include an instruction to transmit the information to the CES; and

at least one of the identified emergency services responds to the queries by transmitting information corresponding with the retrieval key to the CES to facilitate the CES in handling an emergency event.

33. The communication network of claim 1 wherein the plurality of emergency services includes at least one of an ALI database, a Mobile Positioning Center (MPC), a Gateway Mobile Location Center (GMLC), an Emergency Auxiliary Service Provider (EASP), and a Voice over Internet Protocol (VoIP) server.

34. The communication network of claim 1 wherein the packet network comprises an Internet Protocol (IP) network.

35. The communication network of claim 1 wherein the retrieval key comprises one of a telephone number, a network address, a Session Initiation Protocol (SIP) address, a trunk ID, a social security number, a street address, an employee ID, an email address, and an incident ID.

5 36. The communication network of claim 1 wherein the information comprises one of streaming video, streaming audio, graphics data, voice, text or binary data, or executable instructions or scripts.

37. The communication network of claim 1 wherein the emergency event includes a 9-1-1 call.

38. A method of operating a communication network for providing emergency services, the communication network comprising an emergency services network and a plurality of conforming emergency systems connected to a packet network, the emergency services network comprising a plurality of emergency services and a plurality of response gateways connected to the emergency services, the method comprising the steps of:

in each of the conforming emergency systems, facilitating the establishment of a media channel with one of the response gateways;

in one of the conforming emergency systems (CES), responsive to establishing a media channel with one of the response gateways over the packet network and responsive to an emergency event, transmitting a retrieval key over the media channel to the one response gateway;

receiving the retrieval key in the one response gateway, and transmitting a query for information corresponding to the retrieval key; and

receiving the information in the one response gateway originating from the emergency services corresponding with the retrieval key, and transmitting the information over the media channel to the CES to facilitate the CES in handling the emergency event.

39. The method of claim 38 wherein the step of facilitating the establishment of a media channel over the packet network comprises:

using Session Initiation Protocol (SIP) to establish the media channel over the packet network.

40. The method of claim 38 wherein the step of facilitating the establishment of a media channel comprises:

transmitting a request message for the media channel from the CES to the packet network; and

5 receiving the request message in the one response gateway, and responding to the request message to dynamically establish the media channel.

41. The method of claim 40 wherein the step of responding to the request message comprises transmitting a response message to the packet network indicating an acceptance of the media channel, the method further comprising:

10 receiving the response message in the CES, and initiating a process to dynamically establish the media channel between the CES and the one response gateway over the packet network.

15 42. The method of claim 40 wherein the step of responding to the request message comprises initiating a process in the CES to dynamically establish the media channel between the CES and the one response gateway over the packet network.

43. The method of claim 40 further comprising the step of:

20 negotiating parameters of the media channel before the media channel is dynamically established.

44. The method of claim 40 wherein the communication network further comprises a channel setup system connected to the packet network, the method further comprising the step of:

receiving the request message in the channel setup system from the CES, and selecting the one response gateway and transmitting the request message to the one response gateway.

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45. The method of claim 44 wherein the channel setup system includes a data structure that stores information on the plurality of response gateways, the method further comprising the step of:

accessing the information in the data structure to select the one response gateway.

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46. The method of claim 45 wherein the information in the data structure includes at least one of a capacity or current load of each of the plurality of response gateways, an operational status of each of the plurality of response gateways, a number of media channels established with each of the plurality of response gateways, security, a location of each response gateway, data connectivity speed of each response gateway, the type of protocol used by each response gateway, or the type of each response gateway.

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47. The method of claim 44 wherein the channel setup system comprises a Session Initiation Protocol (SIP) proxy or a SIP server.

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48. The method of claim 44 wherein the step of responding to the request message comprises transmitting a response message indicating an acceptance of the media channel from the one response gateway to the packet network, the method further comprising the step of:

receiving the response message in the channel setup system, and transmitting the response message to the CES.

49. The method of claim 44 wherein the step of responding to the request message comprises transmitting a response message indicating an acceptance of the media channel from the one response gateway to the CES.

50. The method of claim 38 further comprising the steps of:

transmitting a request message for the media channel from the one response gateway to the packet network; and

receiving the request message in the CES, and responding to the request message to dynamically establish the media channel.

51. The method of claim 50 wherein the step of responding to the request message comprises transmitting a response message to the packet network indicating an acceptance of the media channel, the method further comprising the steps of:

receiving the response message in the one response gateway, and initiating a process to dynamically establish the media channel between the CES and the one response gateway over the packet network.

52. The method of claim 50 wherein the step of responding to the request message comprises initiating a process in the CES to dynamically establish the media channel between the CES and the one response gateway over the packet network.

5 53. The method of claim 50 further comprising the step of:
negotiating parameters of the media channel before the media channel is dynamically established.

54. The method of claim 50 wherein the communication network further comprises a channel
10 setup system connected to the packet network, the method further comprising the steps of:
receiving the request message in the channel setup system from the one response gateway, and transmitting the request message to the CES.

55. The method of claim 54 wherein the channel setup system comprises a Session Initiation
15 Protocol (SIP) proxy or a SIP server.

56. The method of claim 54 wherein the step of responding to the request message comprises transmitting a response message indicating an acceptance of the media channel from the CES to the channel setup system, the method further comprising the steps of:
20 receiving the response message in the channel setup system, and transmitting the response message to the one response gateway.

57. The method of claim 54 wherein the step of responding to the request message comprises transmitting a response message indicating an acceptance of the media channel from the CES to the one response gateway.

5 58. The method of claim 38 wherein the CES comprises a computer system for a Public Safety Answering Point (PSAP).

10 59. The method of claim 38 wherein the CES comprises a computer system for one of a hospital, a police department, a fire station, a fire alarm company, a security company, an ambulance service, a state 9-1-1 coordinator, the Federal Emergency Management Agency (FEMA), the Department of Homeland Security, the National Geophysical Data Center, or the Center for Disease Control (CDC).

15 60. The method of claim 38 wherein the communication network further comprises an SNR system, the method further comprising the steps of:

receiving the retrieval key from the one response gateway, identifying which of the plurality of emergency services correspond with the retrieval key, and transmitting a message to the one response gateway indicating the identified emergency services; and

20 receiving the message in the one response gateway from the SNR system, and transmitting queries that include the retrieval key to each of the identified emergency services.

61. The method of claim 60 further comprising the steps of:

responding to the queries in at least one of the identified emergency services by
transmitting information corresponding with the retrieval key to the one response gateway; and
transmitting the information from the one response gateway to the CES to facilitate the
CES in handling an emergency event.

62. The method of claim 60 further comprising the steps of:

responding to the queries in at least one of the identified emergency services by
transmitting information corresponding with the retrieval key to the CES to facilitate the CES in
handling an emergency event.

63. The method of claim 60 further comprising the step of:

initiating a notification service in at least one of the identified emergency services for
notifying third parties of the emergency event responsive to a query.

64. The method of claim 38 wherein the communication network further comprises an SNR
system, the method further comprising the steps of:

receiving the retrieval key from the one response gateway, identifying which of the
plurality of emergency services correspond with the retrieval key, and transmitting queries that
include the retrieval key to each of the identified emergency services.

65. The method of claim 64 further comprising the steps of:

responding to the queries in at least one of the identified emergency services by
transmitting information corresponding with the retrieval key to the SNR system;
receiving the information corresponding with the retrieval key in the SNR system and
5 transmitting the information to the one response gateway; and
transmitting the information from the one response gateway to the CES to facilitate the
CES in handling an emergency event.

66. The method of claim 64 further comprising the steps of:

10 responding to the queries in at least one of the identified emergency services by
transmitting information corresponding with the retrieval key to the SNR system; and
receiving the information corresponding with the retrieval key in the SNR system and
transmitting the information to the CES to facilitate the CES in handling emergency events.

15 67. The method of claim 64 further comprising the step of:

initiating a notification service in at least one identified emergency service for notifying
third parties of the emergency event responsive to a query.

68. The method of claim 64 wherein the queries also include an instruction to transmit the information to the one response gateway, the method further comprising the steps of:

responding to the queries in at least one of the identified emergency services by
transmitting information corresponding with the retrieval key to the one response gateway; and
5 transmitting the information from the one response gateway to the CES to facilitate the
CES in handling an emergency event.

69. The method of claim 64 wherein the queries also include an instruction to transmit the information to the CES, the method further comprising the step of:

10 responding to the queries in at least one of the identified emergency services by
transmitting information corresponding with the retrieval key to the CES to facilitate the CES in
handling an emergency event.

70. The method of claim 38 wherein the plurality of emergency services includes at least one of
15 an ALI database, a Mobile Positioning Center (MPC), a Gateway Mobile Location Center
(GMLC), an Emergency Auxiliary Service Provider (EASP), and a Voice over Internet Protocol
(VoIP) server.

71. The method of claim 38 wherein the packet network comprises an Internet Protocol (IP)
20 network.

72. The method of claim 38 wherein the retrieval key comprises one of a telephone number, a network address, a Session Initiation Protocol (SIP) address, a trunk ID, a social security number, a street address, an employee ID, an email address, and an incident ID.

5 73. The method of claim 38 wherein the information comprises one of streaming video, streaming audio, graphics data, voice, text or binary data, or executable instructions or scripts.

74. The method of claim 38 wherein the emergency event includes a 9-1-1 call.